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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,491	11/14/2003	Masahiro Yatake	U 014890-5	1032

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EXAMINER

SHOSHO, CALLIE E

ART UNIT

PAPER NUMBER

1714

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/714,491

Applicant(s)

YATAKE, MASAHIRO

Examiner

Callie E. Shosho

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1/20/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

**Claim Rejections - 35 USC § 112**

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 7 and 15-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 recites improper Markush group. In line 6, it is advised that "and/or" is changed to "and".

Similar suggestion made in claims 15-17 which recite similar claim language.

**Claim Rejections - 35 USC § 103**

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1-3, 5-10, 12-13, 15-16, and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 2000/75245 in view of WO 2001/44384.

WO 2000/75245<sup>1</sup> discloses ink jet ink comprising water, surface-treated pigment, penetrating agent such as acetylene glycol, acetylene alcohol, 1,2-alkylene diol, and glycol ether, polyhydric alcohol, i.e. humectant, in amount of, for instance, 10%, and 0.01-0.5% methylisothiazolone and octylisothiazolone (col.12, lines 8-26, col.13, lines 31-35, 50-52, and 60-62, col.15, lines 15-20 and 45-48, col.29, lines 23-35).

The difference between WO 2000/75245 and the present claimed invention is the requirement in the claims of (a) specific colorant and (b) macromolecular fine particles.

With respect to difference (a), WO 2001/44384<sup>2</sup>, which is drawn to ink jet inks, disclose the use of microencapsulated pigment, i.e. pigment coated with polymer including carboxyl containing polymer. The motivation for using such colorant is that it possesses high dispersion stability. WO 2001/44384 also discloses the equivalence and interchangeability of using self-dispersing or surface treated pigment, as disclosed by WO 2000/75245, with microencapsulated

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<sup>1</sup> It is noted that when utilizing WO 2000/75245 in the above paragraph, the disclosures of the reference are based on Komatsu et al. (U.S. 6,802,893) which is an English language equivalent of the reference. Therefore, the column and line numbers cited with respect to WO 2000/75245 are found in Komatsu et al.

<sup>2</sup> It is noted that when utilizing WO 2001/44384 in the above paragraph, the disclosures of the reference are based on Miyabayashi (U.S. 6,602,333) which is an English language equivalent of the reference. Therefore, the column and line numbers cited with respect to WO 2001/44384 are found in Miyabayashi.

pigment as presently claimed (col.19, lines 4-8, 43-45, 53-55, and 61-62, col.20, lines 10-13, and col.23, lines 45).

In light of the above, it therefore would have been obvious to one of ordinary skill in the art to use microencapsulated pigment in the ink of WO 2000/75245 in order to produce ink with high dispersion stability, and thereby arrive at the claimed invention.

With respect to difference (b), WO 2001/44384 discloses the use of macromolecular fine particles, i.e. resin emulsion, in order to produce image with excellent scratch resistance and water resistance (co.37, line 47-col.38, line 16).

In light of the motivation for using macromolecular fine particles disclosed by WO 2001/44384 as described above, it therefore would have been obvious to one of ordinary skill in the art to use such macromolecular fine particles in the ink of WO 2000/75245 in order to produce image with excellent scratch resistance and water resistance, and thereby arrive at the claimed invention.

5. Claims 1-3, 6-8, 12-13, 15-16, and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 2001/44384 in view of WO 2000/75245.

WO 2001/44384 discloses ink jet ink comprising water, 3-10% microencapsulated pigment comprising pigment coated with carboxyl group containing polymer, 0.1-10% resin emulsion, 5-15% polyhydric alcohol, 0.01-10% acetylene glycol, 1,2-alkyl diol, and 1-10% humectant such as 1,4-butanediol or 1,6-hexanediol (col.19, lines 4-8, 43-45, 53-55, and 61-62, col.20, lines 10-13, col.23, lines 4-5, col.34, lines 5-19, 26-27, 50-51, 58-60, col.35, lines 27-60, col.37, lines 47-52, col.40, lines 12-16, and col.41, lines 15-33).

The difference between WO 2001/44384 and the present claimed invention is the requirement in the claims of methylisothiazolone and octylisothiazolone.

WO 2000/75245, which is drawn to ink jet inks, disclose the use of 0.01-0.5% methylisothiazolone and octylisothiazolone in order to produce ink with excellent preservability and mildew resistance (col.29, lines 23-33).

In light of the motivation for using methylisothiazolone and octylisothiazolone disclosed by WO 2000/75245 as described above, it therefore would have been obvious to one of ordinary skill in the art to use methylisothiazolone and octylisothiazolone in the ink of WO 2001/44384 in order to produce ink with excellent preservability and mildew resistance, and thereby arrive at the claimed invention.

6. Claims 5 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 2001/44384 in view of WO 2000/75245 as applied to claims 1-3, 6-8, 12-13, 15-16, and 18-19 above, and further in view of either Kurabayashi et al. (U.S. 6,367,921) or Tabayashi et al. (U.S. 6,074,467).

The difference between WO 2001/44384 in view of WO 2000/75245 and the present claimed invention is the requirement in the claims of pH of the ink.

Kurabayashi et al., which is drawn to ink jet ink, disclose ink jet ink possessing pH of 7-10 in order to produce ink with excellent long term stability which provides durability for ink jet printer (col.10, lines 8-15).

Alternatively, Tabayashi et al., which is drawn to ink jet ink, disclose ink jet ink possessing pH of 7.5-9 in order to produce ink with good dispersion stability that does not clog printer and provides substrate with good coating (col.8, lines 29-39)

In light of the motivation for using ink with specific pH disclosed by Kurabayashi et al. or Tabayashi et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to control the pH of the ink of WO 2001/44384 to 7-10 or 7.5-9 in order to produce ink with excellent long term stability that provides durability for ink jet printer, or alternatively, to produce ink with good dispersion stability that does not clog printer and provides substrate with good coating, and thereby arrive at the claimed invention.

7. Claims 1-4, 6-8, and 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 2001/44384 in view of EP 676140.

WO 2001/44384 discloses ink jet ink comprising water, 3-10% microencapsulated pigment comprising pigment coated with carboxyl group containing polymer, 0.1-10% resin emulsion, 5-15% polyhydric alcohol, 0.01-10% acetylene glycol, 1,2-alkyl diol, and 1-10% humectant such as 1,4-butanediol or 1,6-hexanediol (col.19, lines 4-8, 43-45, 53-55, and 61-62, col.20, lines 10-13, col.23, lines 4-5, col.34, lines 5-19, 26-27, 50-51, 58-60, col.35, lines 27-60, col.37, lines 47-52, col.40, lines 12-16, and col.41, lines 15-33).

The difference between WO 2001/44384 and the present claimed invention is the requirement in the claims of methylisothiazolone and octylisothiazolone.

EP 676140 discloses using 1-400 ppm of blend of methylisothiazolone and octylisothiazolone wherein the ratio of methylisothiazolone to octylisothiazolone is 1/20 to 20/1 for improved control against fungi and bacteria (page 2, lines 12-19 and 38-40).

In light of the motivation for using methylisothiazolone and octylisothiazolone disclosed by EP 676140 as described above, it therefore would have been obvious to one of ordinary skill in the art to use methylisothiazolone and octylisothiazolone in ink of WO 2001/44384 in order to have improved control of fungi and bacteria, and thereby arrive at the claimed invention.

8. Claims 5 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 2001/44384 in view of EP 676140 as applied to claims 1-4, 6-8, and 12-20 above, and further in view of either Kurabayashi et al. (U.S. 6,367,921) or Tabayashi et al. (U.S. 6,074,467).

The difference between WO 2001/44384 in view of EP 676140 and the present claimed invention is the requirement in the claims of pH of the ink.

Kurabayashi et al., which is drawn to ink jet ink, disclose ink jet ink possessing pH of 7-10 in order to produce ink with excellent long term stability which provides durability for ink jet printer (col.10, lines 8-15).

Alternatively, Tabayashi et al., which is drawn to ink jet ink, disclose ink jet ink possessing pH of 7.5-9 in order to produce ink with good dispersion stability that does not clog printer and provides substrate with good coating (col.8, lines 29-39)

In light of the motivation for using ink with specific pH disclosed by Kurabayashi et al. or Tabayashi et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to control the pH of the ink of WO 2001/44384 to 7-10 or 7.5-9 in order to



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produce ink with excellent long term stability that provides durability for ink jet printer, or alternatively, to produce ink with good dispersion stability that does not clog printer and provides substrate with good coating, and thereby arrive at the claimed invention.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

EP 606985 discloses microbial composition comprising one or more isothiazolones.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Callie E. Shosho  
Primary Examiner  
Art Unit 1714

CS  
8/19/05